

Lakes Louise & Agnes section
Summary

1. Gray oolitic lm	} to formation	103
2. Shaly thin bedded ss		66
3. Sil. sh etc		102
4. Lm -		115

Bar river

1. massive qtz etc	2640
2. Sil, sh (Garnets)	105
3. Qtz - "	600
	<hr/> 3135

St Piran formation
Lake Agnes " " "
Fairview " " "

Handwritten notes in a cursive script, possibly a ledger or account book. The text is arranged in several lines, with some entries appearing to be grouped or numbered. The handwriting is somewhat faded and difficult to decipher, but appears to be a form of shorthand or cursive used in the 18th or 19th century.

Aug. 01

Upper mouth of Canyon Creek Sept 29 23
Canyon Spring (1000) Sept 29 23
G. C. C.



Sept 29 23
Through the canyon in morning
G. C. C.
Canyon Creek

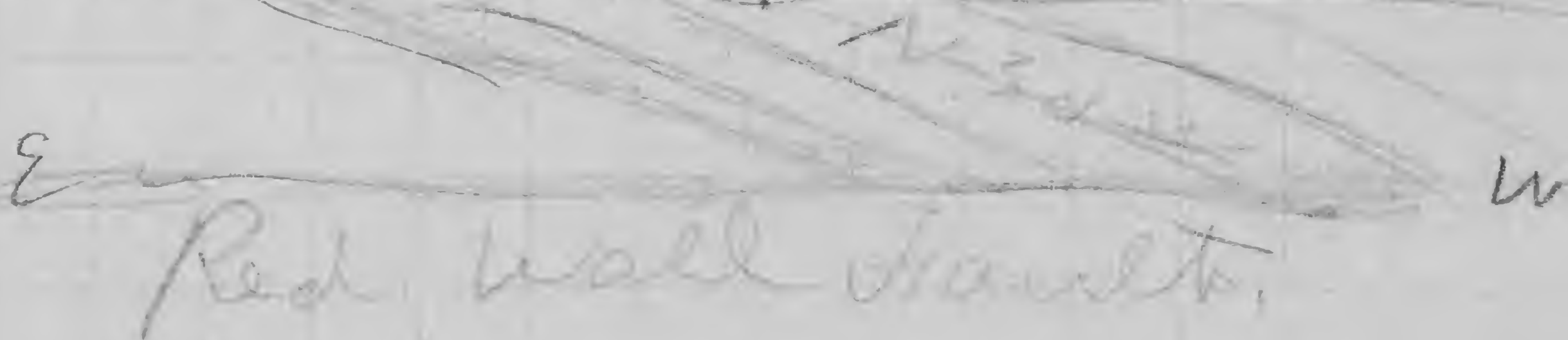
Section from Red
wall Breccia above
Radium Hot Springs
west.

Red wall Fault,
St. N. E. W.
Dip. 90°

Gap - of varying width
to contact.

1) Thick bedded rough-
weathering magnesian
limestone that is micro-
crystalline in many
layers.

St. N. 30° W.
Dip. 50° S.


Red wall Fault.

1216

152

760

100

860

2

R07004

Box 30

F. 2

July 19/18

July 19/18

Mr. Whyte Junction
S. W. slope of Mount Shaffer,
on trail to Lake McArthur,
2.5 mi S. of Hectora on Can-
Pac. Ry. - B. C. - Canada.

going up,

massive sandstone of ~~the~~ ^{St Piran}
formation -

1. Shaly, brownish sandstone
with fragments of Olenellus, 10 ft
loc 61E

2. massive bed of gray
arenaceous limestone.
with fragments of
Olenellus.

22"

3. Chocolate brown
+ grayish fine grained
sandstone passing at 28
feet into a grayish
granular sandstone.

over

28

Massive bedded
gray, arenaceous
limestone. — 65 ft

5) Gray arenaceous
thin bedded limestone
with ^{finely} dolitic layers
of pure limestone that
carries a varied fauna,
Alenellus etc etc
Protypus -
see collection (61^d)

15 feet.

6) Gray arenaceous &
silicious limestone.
with ^{irregular} cherty stringers
on line of bedding. 20.

The Albertella helleri
shale zone is absent
in this section but
is present 2 mi. N.W. on
slope of Mt. P. daray
re

above thin bedded
arenaceous limestone
extend up to the massive
bedded Cathedral
limestone -

R07004

Box 30

F2

July 18/17

July 18/11.

~~Mr. Whyte~~

Mr. Shaffer section above
McArthur Pass.

Cathedral - formation

1/36 ft

5-9 ft 2

3/34 ft

74 ft

18 ft

2

} Ptarmigan formation

} Mr Whyte

Section (Top down)

Cathedral.

Arenaceous, magnesian
limestone, steel gray weathering
brannish to reddish buff.
Massive layers.

Ptarmigan -

1) Bluish-gray thin bedded
limestone. About 3 feet
from top fossils occur in
a thin (2 in) compact hard

bluish lm. ²

36 ft

Fauna.

63 ft { ⁷ *Crepidophthalmus*
Bathyurus
Hyalites

2) Thick bedded, $\frac{1}{2}$ light gray
lm weathering dark color.
Irregular stringers & nodules
of magnesian lm weathering
dirty brown. 59 ft.

Fauna. Annelid trails
& borings.

Black White

3) Grey quartzitic sand
weathering red rust brown
above & dirty gray below 34 ft

1) Gray, more or less
oolitic limestone
weathering very by layers
1 - 2 ft thick breaking

3
down into thin
irregular layers.
magnesian stringers
etc - penetrate along
bedding lines in the
most irregular fashion
Lanna

bid from top to
bottom, 74 ft

2) Thick bedded
gray - magnesian
lim. weathering
dirty gray 18

~~Bottom~~

3) Blank man. rd.
~~Re section~~
of 1910.

4) massive bed of
gray arenaceous
magnesian lim -
with fragments of
Alenellus 22

St. Pierre ~~4~~ from a'p'ci.
Shaly brownish
sandstone with fragments
of *Alenellus* - 10.

R07004

Box 30

F. 2

Aug. 16, 1923

Aug 11/23

Stoddard Brook

Section going up
Base of main limestone
concreted

10^a Any place where it is found
with interbedded
limestone

At 170 feet from base
Sandstone
occurs in thin layer of
interbedded limestone.

Total of 1^a 340 ft.

9) Thick bedded gray
limestone with some
oplitic layers - A
few thin layers at
top of main layer
carry fragments of
small trilobites.

8) Alternating bands of
gray limestone & dark argl
shale - 12 ft.

7) Gray limestone in 390 ft.

$$\begin{array}{r} 95- \\ 57 \quad 115 \\ \hline 172, \end{array}$$

$$\begin{array}{r} 860 \\ 115 \\ \hline 975 \end{array}$$

$$\begin{array}{r} 34 \\ 170 \\ 23 \\ \hline 195 \end{array}$$

$$\begin{array}{r} 340 \\ 18 \\ 390 \\ 250 \\ 150, \quad 445 \\ 14 \quad 195 \end{array}$$

$$\begin{array}{r} 70 \\ \hline 80 \quad 1238 \\ 1145 \\ \hline 2383 \end{array}$$

Aug 11 / 23

layers varying from
 4 to 6 inches (cm) in
 thickness with occasional
 layers 12 to 30 inches
 (cm) thick
 (x) st. N. 60° E. dip. 50° to 60° N
 (at 170 ft from base
 found Syntrachia
 zone -

250 ft

1^d greenish argl.
 shale with thick
 layers of gray lim. 45 ft

1² massive & thin
 bedded hard gray
 lim. 195

1^f alternating shaly
 lim & varying thickness
 of bedded lim. 8-15 ft

450 -

975

170

1145

30

150,

60 to luncheon

~~118~~

Fauna base the Symphe-
 (near base) fauna ~~occurs~~
 similar to 164 occurs
 Bommited bulphite tests
 are scatter throughout
~~at~~ the series but at
 510 feet some traces
 of larger fragments
 were seen
 at 675 feet from the
 base the *Hylurgia* ~~account~~ ~~174~~
 faunule ranges (174)
 there about 125 feet (m)
 of beds but recognizable
 specimens were confined to
~~only~~ thin gray layers
 interbedded in shale & a
^{few} thicker layers of hard
 colored limestone.

12. a ~~thick~~ band of
 dense colored hard
 limestone in thick layers
 is assumed as the

4

Lower portion of the
series - It is 8 feet (m)
thick locally & thins
out to 2 feet (m) at
a distance of 600 feet
(m) to the northeast.
This limestone is at
the base of the beds,
containing the Hungarian
fauna.

The alternation of
calcareous shales &
thin bands & layers
of limestone continue
on up.

At 440 feet from base
stringers & nodules of
chert occur irregularly
in the limestone layers &
as thin lamellae in the
shales.

Small calcareous mud
lump & interformational congl
abundant in places all
through section.

$$\begin{array}{r}
 648 \\
 335 \\
 \hline
 113
 \end{array}$$

$$\begin{array}{r}
 16 \\
 \hline
 15
 \end{array}$$

$$\begin{array}{r}
 500 \\
 35 \\
 \hline
 535
 \end{array}$$

$$\begin{array}{r}
 113 \\
 535 \\
 \hline
 648
 \end{array}$$

at 535⁵ feet (up)
found Ophileta zone
of upper main, as
at ~~same~~ Mt etc.

Thin band of greenish
argill. shale occur
in the upper 60 feet
(m)

Above the Ophileta zone
the limestones begin to
have layers of white
weathering chert running
along irregularly with
the bedding.

St. at Ophileta zone
N. 80° East.

Dip 70° N. 10° W.
Total of 19. 648

1st at 113 feet above
Ophileta zone a thick
hard, fine grained
limestone with

$$\begin{array}{r}
 2 + 14 \\
 \hline
 70
 \end{array}$$

$$\begin{array}{r}
 984 \\
 \hline
 0
 \end{array}$$

$$\begin{array}{r}
 16 \quad 31 \\
 \hline
 123 \\
 615 \\
 9
 \end{array}$$

$$\begin{array}{r}
 705 \\
 \hline
 \end{array}$$

much stent^{er} in, ~~layers~~
thin layers & irregular
nodules - with
interbedded thin
bands of hard calcareous
shale. 83 ft

1 ft ~~Hard~~ gray & dove colored
~~comp. fine mud~~ limestone with bands of
argillaceous & finely
arenaceous shale. 705 ft

^{large} fragments of trilobites
occur in the matrix
of the small mud
lump limestones.

Fault line that
brings the upper
mass except the Rich.
mud limestones.

R07004

Box 30

F2

8-29-23

8-29-23.

Cabin Mountain Section

Cabin Mountain is the first mountain south of Sinclair Pass and forms the north end of the Stanford Range above the Kootenay River valley, British Columbia Canada.

The summit of the range at this point is formed of dark Silurian limestones.

The section above the Ordovician was not measured or studied in detail at this place & the thickness ~~was~~ is based on estimate

Section -

Silurian.

Stanford formation

1. Thick bedded
(2 to 6 feet (m)
dark gray, rough
weathering, ~~magnesian~~
+ more or less siliceous
magnesian limestones
forming cliffs + high
points (Estimated 1200 feet)

Fauna (See E. Kirk)

2.

(6 line space)

Brisco formation

12. Gray, compact
hard cliff forming
limestone with
considerable gray
chert in nodules
stringers & thin sheets
or ^{irregular} layers (Estimated 250 ft.)

Fauna. As found a
mile distant on the
north side of Sinclair
canyon -
(See list 1922)

11 8-29-23

2. Cabin Mountain

Quartzite

1. Light-gray ^{to white} con-
pact quartzite in
layers 3 to 10 feet
(m) thick

St. N. ³⁵⁰ 60° W. (Est.) - 110 feet

Dip. 50°, N. 300 mag 65° S.

Ordovician.

Sinclair formation.

(Unconformity).

There is ~~no~~ physical
evidence of unconform-
ity beneath the
quartzite but the
Glencole shale for-
mation with its strongly
marked Middle
Ordovician graptolite
fauna is absent, ~~at this~~.

1. Thin bedded gray

A section measured
about a mile to the
northwest gave
the following:

white and light

.76 m.

SS-

18 to

similar

most common

at

traces of fossils were found.

any of the exposures
of the quartzite.

reddish brown weathering
sandstone passing
into arenaceous
shale 330 feet (m)
down 474 feet

Lamina. Numerous
annelid trails and
borings on ⁱⁿ some of the
thin layers of sand-
stone.

St. N. ⁵⁵80° W.
Dip. 40° N. ³⁵10° E

1 b Gray. hard thin
bedded sandstone 48 ft

1 c Dark grayish
black slightly &
finely arenaceous
shale 100 ft

1 d Light gray quartzite
weathering buff gray - 7 ft
Total of 1. 630.

474
157
630

Along a mile to the
northwest the following

2^a. Dark finely
arenaceous & silicious
shale with occasional
thin layers of hard, dark
arenaceous earthy
rock & a few
lenticular concretionary
nodules carrying
graptolites 707 feet

Fauna. Noted
fragments of graptolites
102 feet (m), 417 feet (m)
& 572 feet (m) below
the summit - At 517
feet (m) collected
the following species, ~~to~~
(locality 219) occur
Copy a from letter of
(1/2 pg vacant.)
Sept. 9th of Richardson.

2nd Band of dark
silicious, impure almost
black limestone that

a mile to the northward
 a small collection, from
 a probably lower zone
 than 219 zone. This
 following as identified
 by Dr. Ruedemann

(Locality 5591 16L)

Copy 28 x + xx
 068
 290
 101

of Ruedemann
 letter of July 10"

break down on
weathering slopes into
shales & very thin layers / 28 ft

2^o Arenaceous and
silicious shale that
^(about 55 feet in) gradually passes ^{into} ^{the} ^{base}
grayish black argilla-
ceous shale with
thin interbedded layers
of limestone. 0
Total of 2. 290 ft.
1025.

Total of Sinclair formation 1655 ft

Ozarkian

mass formation

1. more or less irregular
dense gray limestone in
layers & bands ~~of~~
varying ~~thickness~~ in
thickness from a few

In thin bedded gray &
 more or less arenaceous
 & siliceous limestones
 that occur near a fault
 about half way between
 the second & third bridges
 from the mouth or gates
 of Smith's Canyon
 a fauna occurs
 that $\frac{206}{545}$ corresponds
 to the Lower zone
 of the Sargach formation
 of the Clearwater river
 section & which may
 represent the fauna
 near the base of 2nd
 of this section. The
 fauna includes (Locality
 162.) new bases.

7

8/29/23

inches (one to ten, cm)
to 2 to 6 feet (m)
and interbedded with
irregular interbeds in
a gray calcareous
impure shale. 545 ft

Strike near base of
exposure above talus
slope.

St. N. ⁴⁵⁰ 70° W. } mag.
dip. N. 20 - N.E. }

Fauna: At summit. (21th)
Lingulella -

Just above ~~base~~^{the}
talus slope above
500 feet (m) below
summit, fragments &
sections of Aphileta
les. Wyley occur
in a hard dark
colored layer of lime
stone

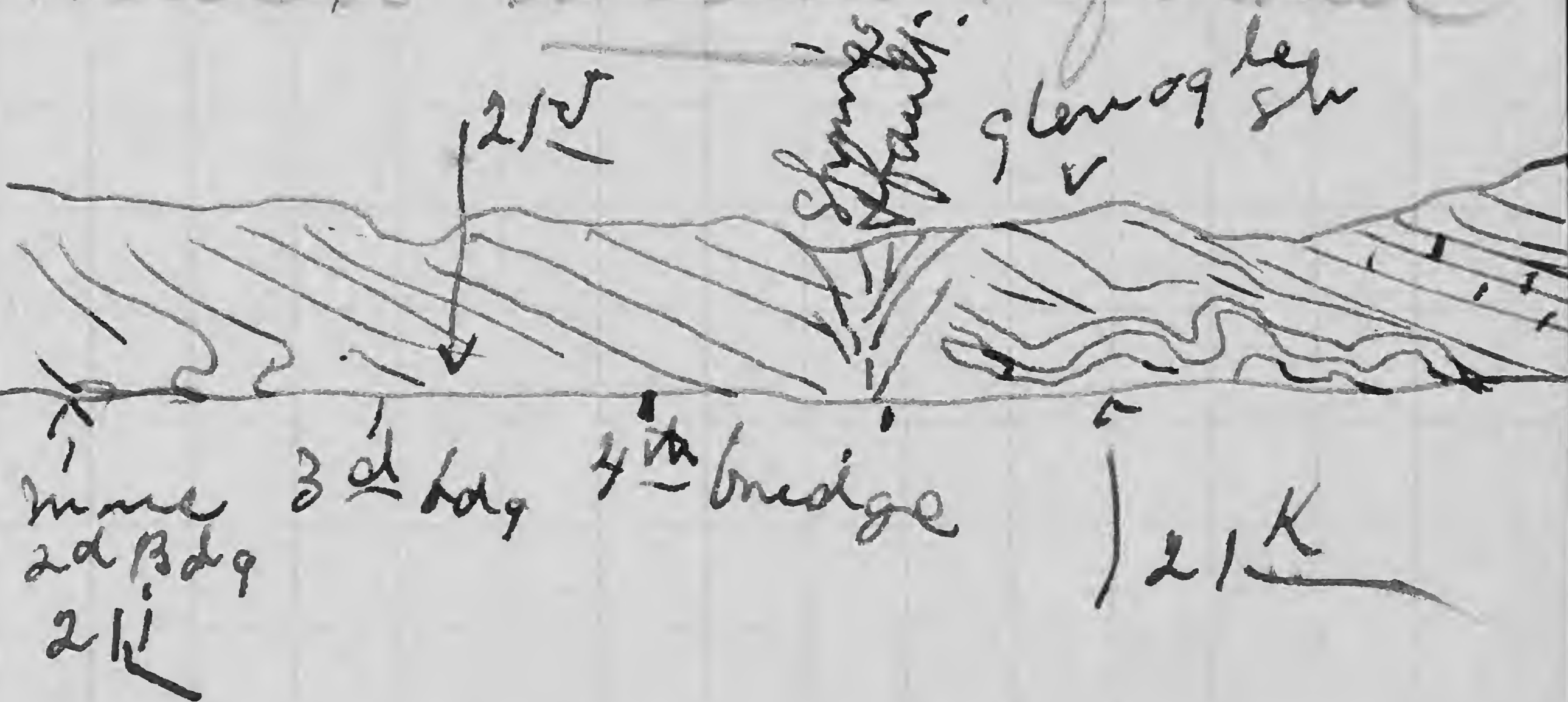
Sept 6/23

Ordovician

Glengyle shale

Kicking Horse Canyon
just below tunnel
31-08 on C.P. R.

Faulted in on mass
Black shale with
graptolites with gray
arenaceous shale
thin bedded, sandstone
much twisted & folded



Point above
Richardson

~~164~~
169

164

164

3/20/03

File

164

164

164

164

164

164

164
164
164
164

164
164
164
164

15 ~~47~~ 41
246



R07004 Box 30 F.2

JUN 1, 1925

about 1/4 mile above large lake on creek.

New page

① Aug. 12/09.

Vermilion Pass section.

JUN - 1 1925

Bar ~~River~~ range

Rocky Mts -
Alberta.

The ascent to the pass
up Little Vermilion creek
from the Bar river is
over drift for two miles
or more & then the
shales & sandstones of the
pre-Cambrian Beltian group.
The contact of the
Cambrian basal conglomerate
& the Beltian, gray, siliceous
shale of the ^{is in the}
canyon ~~almost~~ ^{south} east of
Bodum mountain. The
basal conglomerate is
very finely developed
& ~~has~~ in massive layers
alternating with beds
of coarse sandstone.
The conglomerate extends
up the creek, dipping about

(2) Vermilion Pass

250 S.W., past ~~two~~^a small
pond - A band of purplish
arenaceous, platy shales
~~is~~ superjacent to the
conglomerate & above
that the massive
bedded, compact -
slightly cross bedded
light gray & purplish
sandstones of the ~~Laramie~~^{Don't know}
formation. The
section gives a fine
opportunity to examine
each ~~bed~~^{bed in detail} in the
sandstone just below
the shale. Well marked
Scolithus occurs.

At the lower end
of the ^{upper} pond on the
north side of the
Pass a fine outcrop
of the Lake Louise
shale occurs and

(3)

Vermilion Pass³

above
on that the sandstones
of the Mt St Piran formation
at the upper ^(Baith) end of the
upper sandstone series
occur in a light gray
thin bedded sandstones.

Abolilla-like brachiopod.

(60B)

Orthotheca-

microdisca

Abolilla-like freemanti

of Nevada.

The St Piran sandstones
form cliffs back from
the pass on the upper side
mountain & the high
ridges north of Storm
mountain on the ^{south} east
side. There is a fine
section of up to the
base of the limestones
of the Mt Whyte forma-
tion & an up through
that into the massive

limestone of the Cathedral ^{Venturian}
formation ^{which} ~~that~~ ^{came} from
the summits of Storm
ket on the east & the
Whymper, ^{and Boon by an} on the west,
and north west.

From base of Mt Whyreper
looking across Vermilion
river S.E. (2mi) below
summit of pass the outline
is Storm Mt.



At no point ^{south west} within 5 mi of
the Pass do the limestones
reach the canyon bottom
+ the Alenellus gilberti
+ O. canadensis zone
are ¹² 1000 feet or more
up on the sides of the
mountains.

Sept. 22^d/17.

The

Mr. Whyte formation.Vermilion Pass - on
Mr Whyte's. has

only a ~~band~~ ^{single layer} of oolitic
limestone interbedded
in bluish black thin
bedded limestone. ^{They measure}
I found a few ^{about 60 ft}
heads & tails of a species ^{in thickness.}
of Ptychoparia fragment
of trilobites.

Rough arenaceous
limestones above &
below with traces of
annelid trails & things.

It seems as tho^h Dr
George Lawson must
have been in error in
stating that the limestones
reached the canyon head
& that he found fossils
in interbedded limestones
or Vermilion Pass.

$$\begin{array}{r}
 163 \\
 \underline{5} \\
 815
 \end{array}$$

$$\begin{array}{r}
 175 \\
 \underline{5} \\
 875.53 \\
 158 \\
 \hline
 790 \\
 105 \\
 \hline
 895.
 \end{array}$$

$$\begin{array}{r}
 46 \\
 138 \\
 690 \\
 92 \\
 \hline
 782
 \end{array}$$

$$\begin{array}{r}
 80 \\
 \hline
 400. \\
 55 \\
 \hline
 455
 \end{array}$$

$$\begin{array}{r}
 18 \\
 46 \\
 \underline{5} \\
 230. \\
 30
 \end{array}$$

R07004 Box 30 F. 2

Ozarkian² - (Sullivan Canyon
Main - (?)

700 ft. -
500 ft. -
200 ft. -
100 ft. -
50 ft. -
25 ft. -
10 ft. -
5 ft. -
2 ft. -
1 ft. -
0 ft. -
The shale layers of
against the glauconites
just below the
hot spring & south of
against the Red Wall
Fault about 1000 feet
northwest of the hot
spring.

75 feet above the base
of the shale a small
Lingulella & fragments
of small trilobites occur
in the shale & in
some of the layers of
limestone.

The alternating shales
& interbedded layers of
bands of limestone extend
continuously for a long
distance with an
average dip of 70°
80°

Total measured
section —

1320 ft.

~~37~~

182

152

110

Locality, 21d (Probably
some on small fault
found near contact
with Red wall fault
breccia.

② There is no hard & fast
line between 1 & 2 the
shales & interbedded
limestones change by
the disappearance of
the shale & the greater
proportion of limestone.
These limestone vary in
thickness of layers from
2 inches to two or three
feet.

To fault.

925 feet.

~~Half of fault~~
~~locally 500 ft.~~

Strata much deformed
on south side of fault
(see photo)

182

910
120

1030,

About 450 feet (m)
above the base the
Bampha faunula occurs
and 900 feet (m)
from base the Syntrophia.

Twenty feet north
east of the
faulth the faunula
contains Syntrophia
& Symphurina (21E)
100 feet S.W. - Symphurina
in same character
of limestone. The fault
line has cut out some
of the strata judging
from a comparison
with the Shoddant
~~reek~~ - Dry Creek section
5 miles () to the
south.

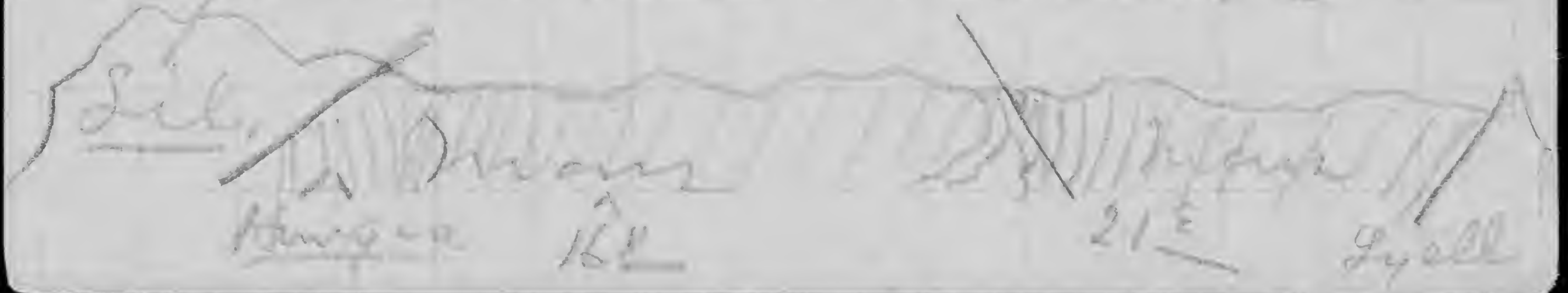
Southwest of the
faulth the section
is taken off at the

base of the ⁶ Upper Lytle
mass as No. 3.

~~B. Calcareous & argillaceous shales with layers & bands of hard gray limestone in layers varying from 2 in to 2 1/2 or three feet in thickness - many of the layers being composed of small mud clumps & ~~broken~~ bits of limestone and ~~perhaps~~ an interformational conglomerate.~~

1030 feet.

Section broken by a fault that has thrust the ~~the~~ Silurian Sinchian formation north over against the mass.



33
37
110 -

550.
71 -

1030 625
405

F2

Box 30

R07004

Lake Louise

Sept 6/07

Lake Louise, B.C.

Sp of basal quartzite
dip. S. 25° W. ~~N.~~ 25° W.

132

a) massive bedded light
gray, dark weathering
quartzite with a few
thin parting of arenaceous
shale.

b. 825 x 50

875

Sil. shale & thin bedded
sandstone

24

c. 05

33

d shale ~~greenish sil~~ with embedded
pts layers.

143

105
10

115

650

65

715

12

19

3

66

E. 94-

715

2. Brownish sandstone -
with greenish sil
shade parting's
Lama, near upper part.

72

Abundant
Hyolithes of
Protiprus

3. Thin bedded
Calcareous, cementing
arenaceous dark
dip gray weathering
dip brown with
intercalated beds
6" to 2' thick of
greenish siliceous shale

115.

4. Greenish sil. sh.
at the base a large
Lama occurs - (Bacanthus)

66

5. Alternating layers of
character of 2. interbedded
with gn sh.

38

52
~~63~~ - massim.

6875 Br / 87 16
 6400

77 to to be of wh
 91 " here "

315
 31

 346

77
 385
 88

 423

4 5
 2640

1958/103

2640
 187

 2827

6) ^{thin bedded} Shaly sand sandstone
with thin layers of
intercalated bluish gray
lm.

66

Fauna.

Number trails of
annelids, trilobites.

7. Gray calcitic limestone
in thin beds - with
interbedded banded -
bluish & steel gray lm.
the steel gray weathering
buff. Passes into thin
bedded, compact bluish
gray lm towards the top. 103

Fauna.

Fragments of trilobites
did not give ten
minutes to looking for
fossils.

R07004 Box 30 F.2

Section of Canby
at Lakes Louise and
Agnes - Canadian
Rocky Mountains, Brit-
ish Columbia.

Sept. 6 '07.

~~Cathedral
mountain~~
Massive bedded crena-
ceous limestone forming
summit of Mt. Whyte.
Did not attempt to
measure this formation
It is 2000 feet or more
in thickness.

2. Gray oolitic lime-
stone in thin beds
with interbedded
banded bluish & steel
gray limestone. The steel
gray, dolomitic layers
weathering to a buff
color.

On Mt. Bosworth

(2) Lake Louise
quite a fauna was
collected from this zone.
Also on W. M. Stepten.

3. Shaly & thin bedded,
hard gray sandstones
with a few thin
layers of bluish gray
limestone interbedded
so as to give a banded
appearance to many
of the sandstone layers. 66
Fauna. Amelid trails
& trilobite tracks.

4) Greenish siliceous
shale with a few
layers of dirty gray
arenaceous limestone
interbedded at irregu-
lar intervals.

38

5. Greenish siliceous
shales in massive

3. Lake Louise -
layers. The lower
two feet of this forma-
tion is a dark gray
silicious shale with
numerous fossils -

64

Fauna

Lingulella -

Micrometra

Ptychoparia 3. sp.

Bathyuriscus -

Isacanthoidea -

Hyolithes.

This is the fauna found
in the drift blocks on
the south slope of Mt.
Bosworth. (See call.)

6. Calcareous, thin
bedded, arenaceous,
dark, dingy gray lime-
stone, with numerous
small ^{concretions} concretions and
a few bands of ~~intercalated~~
~~beds~~ of greenish

(4x Lake Louise
siliceous shale from
6 inches to two feet
thick.

115

Lamna

Abnellers thru out.

388

Protypus -

Bar river group

7. Brownish & gray
sandstones with
thin partings of
greenish siliceous
shale.

72

Lamna -

Orthotheca -

Abnellers -

Protypus -

8a massive bedded
quartzitic sandstone

715

8b greenish siliceous
shale with occa-
sional interbedded
layers of quartzitic



sandstone

143

8c Thick bedded gray
quartzitic sandstone 33

8d Greenish & gray
silicious shale and
thin bedded sandstone
layers. 24

8e Massive bedded
quartzitic sandstone
usually light gray
and containing a
few partings of
gray arenaceous shale 875/

8f. Thin bedded quartzitic
sandstones, with some
shaly partings, & a band
of shale about ten
feet thick towards the
base - 295

6 - Lake Louise.

8-2 massive bedded
light gray quartzitic
sandstone.
Scalithus borings -

44

8-4 massive bedded
purple colored, quartz-
itic sandstone.

88

8-1. Quartzitic sandstone,
in layers one inch to
6 in thick, some shaly
silicious parts.

423.

Total of 8. = 2640-
72-

9. Gray silicious, hard
chale

105

Fauna

Lingulella O

Micrometra -

Saltenella, Amelietrills -

Cruziana -

10. Thin & thick layers
of gray quartzitic sand-
stone (Est. -

600.



R-7004 Box 30 F. 2

Field notes
Tokum Creek
(~~North~~ Marble Canyon) Sept 12

The valley of Tokum Creek
collects
Prospectors Valley
trends N.W. from its
mouth & is on the
line of the division
between the Middle
& Upper Cambrian
series of the rocks.
The M & C - series
form the peaks &
ridges of the Ban
Range. The strata
dip S.E. 10° - 12° from
the formation to Vermilion
Pass. The peak near
Wentkahnna Pass.

The U - C strata
are tipped to the
south & S, East

the broad canyon
valley of Tokim
creek following
the line of the
folding or ^{overturn} ~~overturn~~



The strata immediately
above the M-C
for 1500 feet or more
are arenaceous, with
calcareous & calcareo-
magnesian bands of
shaly & massive beds.
No fossils found.
The character of

the pediment indicates
fresh water deposits.
Many of the bands
of shales have a
reddish tinge such
as shown in the
Van Horn Range
to the N. W. west
across across the
Kicking Horse valley.

Rv 7004 Box 30 F2

~~1-3~~
~~Lectures at Kansas~~
~~Silurian (Richmond)~~
~~Missouri (D. 1st) 1st 2.~~

Ozarkian -
main formation -

(12)
Dark, compact argilla-
ceous shales with an
interbedded irregular
layers of hard, com-
pact - gray limestone
in stringers and
a few layers, 3 in (avg)
to 12 in (avg) thick
156 ft (m)

Truman - Near top 17[±]

(17[±]) Billingsella -

(6 lines)

1st Compact hard gray limestone
6 ft (m)

162

108

~~27~~

297.

1276

15

4

Somewhat rotten dark
gray shale ^{occasional} with ^{unbedded}
more or less irregular
layer of dark gray
limestone - 54 ft (m)

1st massive bed thin
layers ^{hard} gray limestone
with parting of gray
shale -

Fauna 17th 48 ft (m)

Fragments of trilobites -
6 lines

1st Compact hard gray
buff weathering limestone in
layers 6 to 14 inches
(^{c. 20}) thick 4 ft (m)

St. N. ²⁰ 75° E

Dip 40° S 70° E.

D. gray shale with layer
of buff weathering gray
limestone 2' 5" (1' and
to 6" thick - thick)

at 17 feet ⁵ (in)
down for m a solid
band of layers the
shale having
disappeared -

29'
292 1/2
(in)

Total
Taina (On back)

The section was here
taken along road
the S. E. face of
Sabine mountain to where the
line in dip break
lower peak about the debris
slope
at the S. E. corner
of the mountain
section of the mass
is of base from the
directly opposite the
face of the Silurian
~~Richmond~~ to the
contact with the a
magnesian limestone
which is assigned to the
of the Lyell Vol of the
Sanback Range section

~~310~~
~~14~~

~~174~~

275
 170
~~276~~

 727

35 to
 Mamine May
 Bayen

210
~~98~~

~~308~~

131
 61

~~98~~

175
 6
 6 June 1880

6
north of the Bow Valley.
~~Remains~~

19. Just below the
thin limestone of 15.
shale with interbedded
stringent thin layers
& flat nodules of
limestone appear which
contain the Sankia
fauna which also
occurs in the
limestone on the
debris slope of the
section of 17. above.

Lance. (Copy from 6a) 170. ^{but}

St. N. 25° W.

Slip 50. S. 65. E

1 h Buff colored
Argonaceous shale

with reddish
buff brown with a few

interbedded layers

of gray limestone

54 feet (in column)

noted Argonaceous

On the south-west
angle of Sabine Mt
the hard shales of 12
form a dark colored
cliff above the softer
light gray shales
beneath - In the space
of cliffs on the north
face of ~~the~~ Sabine Mt.
there appears to be
an unconformity
between the lower
& the superjacent
Silurian but this
may be only a
local upturning of the
lower shale against the
massive bedded Silurian
limestone - usually the
shales & limestone
appear to be conformable.

6a

~~Lamson 175 Sec~~
~~collections.~~

Fragments of Saukia
similar to those of
locality 175 were
found in the upper
portion of 19

~~continued on layer~~
~~200 ft (m) thick~~
 The shales became
 slightly coarser
 at 200 feet (m)
 down

<u>Fauve.</u> (over)	275 ft
Fauve (thin)	1/2 ft
Total Mass -	<hr/> 720 ft (m)

The distinction between
 19 & 19 1/2 is caused
 decrease of limestone
 & argillaceous shale &
 an increase of fine
 arenaceous sediment.
 As seen in cliffs there
 is very little ~~noticeable~~
 change in discolored ~~rock~~
 by the color. The ~~discoloring~~
 is ~~small~~

Famna. A small fauna
occurs ^{54 feet (m)}
below the summit of
1st that contains the
following species. Loc

(in a thin
interbedded layer of soft
gray limestone)

17 v.

(6 line space)

R07004 Box 30 F2

Stoddart - Dry Creek ^{Section}

Section between Stoddart
+ Dry Creek, eastern
side / Columbia river
valley, 7 miles (Km)
north of Lake Windermere -
about 5 to 5 1/2 miles S. ^{Km} S. ~~Lincoln~~ Canyon
at the mouth of Stoddart
Creek Canyon is flanked
on either side by
a cliff of massive
bedded ~~rough weather~~
^{finely crystalline} ~~arenaceous~~ limestone. It may be
seen ~~on the north~~
side ~~looking to the~~
north east ~~on the south~~
side slightly to the
W, S. W. This limestone
is apparently beneath
the shales + interbedded
limestones of the lower
~~limestone~~
formation.

In which we belong to the
 North, ^{about one mile (1 km)} forming foothills
 to the high cliffs of
 massive Silurian lime-
 stones that constitute the
~~high~~ ^{eastern} wall of the
 valley. ^(On base of slope of top)
 The ~~Shale~~
 + limestone of the
 mass dip to the north
 east ~~45°~~ ^{20°} that
 higher + higher strata
 about a ^{succession of} fault. The
 Silurian ^(Beaverfoot) limestone. They
 are separated from the latter
 by a fault that extends
 for a mile or more ^(over)
 The western side of
 the mass limestone +
 shale ^{is} covered by
 the high terrace drift
 range of the Columbia valley.
 The block of mass
 is about 15 of a mile ^(1 km)
 in length + includes
 h. s. follows

(a) and (2) which is a portion
 of a major fault line along
 the western side of the
 Stanford range) in places
 the terrace drift ^{gravel} extends
 up to the Salinian &
 in others a narrow
 strip of ^{limestone} ~~mass~~ outcrops
 above the gravel hills
 & terraces. The Mons limestone
 are fragments of a large mass that
 formerly extended to the
 westward prior to the
 recent ^{orogenic} ~~orogenic~~ ^{uplift} ~~uplift~~
 faulting. It has
 been an essential
 factor in forming
 the western side
 of the Brice & Stan-
 ford Range. (on back of 3)

Terrace
 gravel
 Mons

See 2 in
 sketch

X) & the western ^{lower} face of the
 Stanford Range

with a high dip (70° to 90°
west). How much dupli-
cation of strata ^{occurs} by faulting
* folding in the great
thickness of Man is
unknown (See p. 1) See
discussion of thickness
of Man formation in
Brice & Stanford ranges.
p. 2)

Man bay 2 to (a)
on p. 2

from all of the
 known series from near
 the upper limit
 down to the Saskia
 zone at its base
 which is superjacent
 to a massive bedded
 limestone that occupies
 the stratigraphic
 position & has the
 character of the
 Upper Cambrian Lyell
 limestone of the Bon
 valleys sections to the
 north.

(and Saskatchewan)

Ozarkian
Mass formation -

p. 41

Other major faults occur within the range to the eastward that have "dropped" long strips of Silurian limestone on the east of the western strip of Mons and a second north and south strip ~~east~~ of the Mons east of the Silurian that extends ~~some~~ over 6000 feet (dip of ^m 60° to 80°) up the Sinclair Canyon before it is cut off by the "great" Red wall fault. Another strip of the Mons occurs east of the Silurian of the "Red wall breccia" that has a exposure of nearly 6000 feet (m) along the canyon the

pg. 4. next

Stoddard & Creek Section.
Main formation Ozarkian

1. The highest beds exposed are two bands of hard gray interformational conglomerate limestone some six feet in ^m thickness separated by three feet ^m of gray silicious shale.

Dip 80° N. ^{25°} ~~mag.~~

Strike - N. ~~80° E.~~ ^{25°} ~~mag.~~ ^{west.}

Below there are single layers and bands of hard, silicious gray limestone with more or less interformational limestone conglomerate made up of small irregular lumps of ragged calcareous mud, their irregular and angular bits of gray limestone with angular or rounded

edges ^{the layers and bands of limestone} interbedded
in gray siliceous shale.
Stringers ^{very irregular} of thin layers
of gray chert occur in
the ^{steel gray} clearest layers of
limestone. Thin layers
of limestone .25 in to 2 in
(^{cm}) thick occur in
the shale separating the
thicker layers & bands
of limestone.

Thickness of 1. 705 ft (m)

Fauna. The only fossils
found were near the
top & consist of a
single ventral valve
of Syntrophia, a whorl of a
small ~~flat~~ depressed
gastropod & a small
fragment of the test of a
trilobite.

2. ³
Hard, ~~steel gray, fine grained~~
compact -
magnesian limestone
in thick layers -
12 to 30 inches
(^{cm}) with
much light gray
weathering chert in
thin layers .05 to 2 in
(^{cm}) thick & numer-
ous, irregular cherty
nodules. 83 ft.

A silicious or finely
arenaceous shale forms
parting between some
of the layers -
Fossils - No fossils
observed.

3. Alternating bands of
calcareous & silicious
shale with layers of
gray limestone of
varying thickness and
character: the limestone
may be dark colored

compact with conchoidal fracture; hard dark gray ~~impure~~ with siliceous shale in thin irregular laminations: ~~hard~~^{hard} lumps of small size scattered through ~~it~~ or mainly composing it; and a few ^{thin} layers of soft gray more or less finely crystalline limestone crowded with broken & rolled fragments of the test of trilobites.

648 ft.

~~about~~ In the upper 100 feet (m) there are a few ^{thin} layers of light gray weathering chert running along irregularly with the bedding of the limestone & shale.

~~Also~~

In the upper two or
three hundred feet
the strike of the
beds is N. ^{150°} ~~80°~~ ^{150°} East (mag)
dip 70° N. ^{150°} ~~10°~~ ^{150°} East (mag)

Fama. In a ~~masses~~
of hard, dove colored
to gray limestone 30
inches (cm) thick
that occurs 113 feet
(m) from the
top of 3 a number
of gastropoda were
found. These include
172) Aphileta cf. lec. n.
Raphistoma.

6 lines space
(Same fauna occurs)
Fama sp. 64k

2. Near the
top 125 feet (m)
above the base of
3. a compact, hard
gray limestone, contains
fragments of the Hungia
~~thumyle~~ and these were found
down through to the near
the base. About 50 feet (m)



above the ⁶⁹ base the
Hungua faunule included
(174)

Hungua ———
lean 6 lines -

In the section on the
north side of Day Creek
this zone gave - (174)

Hungua
(6 lines)

4. A thick layer of
hard, dark colored
limestone, 6 to 8 feet ^{m)}
thick where the section
crossed, was assumed
to mark the base of
3. before it ~~there~~ ^{there} is
a thick series of
alternating bands of
shale and limestone.
mostly small mudlike

lumps and bits of
 so-called limestone shale
 (interformational con-
 glomerate). Thin even
 layers of ^{hard} limestone occur
 irregularly in the shale
 & with the thicker layers.
 There is much similarity
 between the series above
 (3) and the series 875 feet (M)

Fauna. Fragments of
 the tests of trilobites
 occur on many of the
 layers of limestone but
 it is ^{only} ~~not until~~ the
 lower portion is reached
 that ~~the~~ recognizable
 fragments were collected -
~~these include~~ - These
~~specimens~~ ^{fragments} indicate the
 17 ~~lower portion~~ of the Symphysina beds
 (lower) of the
 Lincoln canyon section.

811

A local sigmoidal flexure occurs in this series (4) but by carrying the section east of it the ^{any} duplication of strata was ^{avoided} prevented.

5. ~~massive~~ Alternation of thick (18 to 30 inches (cm)) & thin (.25 to 3 inches (cm)) layers of hard, close grained dark gray limestone 195 ft

6. Greenish argillaceous shale with a few interbedded layers of dark gray limestone 45 ft

7. Medium gray limestone in layers varying from one to six inches (cm) in thickness with occasional layers 12

$$\begin{array}{r}
 457 \\
 408 \\
 \hline
 865
 \end{array}$$

$$\begin{array}{r}
 120 \\
 408 \\
 457 \\
 \hline
 1045
 \end{array}$$

912
to 30 inches (cm)
thick. 250 feet (m)

Strike N. 60° east.
dip 50° to 60° north 30° W.

Fauna. About 80 feet (m)
below the top a well
marked faunal zone
that contains many speci-
mens of Systropharia (17X)

6 miles

8 Alternating bands of
gray limestone and
drab gray argillaceous
shale. 390 ft

Fauna. Fragments of
trilobites in shale limestone.
about 190 feet from top (172)

9. Thick bedded dark
limestone with a few
oolitic layers - 18 feet

Fauna. None observed.



~~12~~ 40 13

10)

Argillaceous shale with
a few interbedded layers of
hard bluish gray, more
or less interformational
conglomerate limestone.

340 ft

Fauna. At 170 feet
below the top
numerous fragments of
the Saukia fauna
occur. (17 ft)
4 lines

Concealed

117 feet.

Total mass
exposed.

3766
~~3550~~ feet

~~over~~ Below the lower
exposed ~~there~~ is a
drift covered slope
that extends down to
a cliff forming a thick-

Upper Cambrian
[] Syll formation.

bedded, ~~semi~~ rough
 weathering, semi crys-
 talline, magnesian
 limestone dipping to
 the north about 20°.
 It is unlike any of the
 limestones above the
 Mon & corresponds
 in position to the
 magnesian limestone
 beneath the Mon
~~at~~ near Fairmount
 Hot Springs and at
 the southern end of
 Stanford Range and
 Sabine mountains east
 of Canal flats and
 This limestone corre-
 sponds ~~to~~ in position
 to the massive magnesian
 limestone of the
 upper portion of the
 Lyell Upper Cambrian
 formation & north

East of the Ryecliff
Hot Springs beneath
the base of the
mass in Sinclair
Canyon

~~see also~~

7215

of the Bar Valley in
the Sambuck Range
and is the only
~~evidence~~ of formation
I have seen in the
Stant and Range that
might be referred
to the Upper Cambrian.

The thickness of this
supposed exposure of
the Lyell formation is
about 125 feet (m)
down to the level of
Stoddard creek.

F2

Box 30

R07004

July 4, 1888

July 4/88.
Phillipsburgh Section.

Crossed the section from
the *Aphileta* beds to the
eastern edge facing the
G. I. R.R. N. of St. Thomas.

The section from the first
appearance of the *Lituites*
above the *Aphileta* horizon
indicates a repetition by
monocline uplifts but
I could not demonstrate
this without an elaborate
collecting of fossils.

The section on the line
of the Boundary is the
best up to the *Lituites*
horizon.

Phillipsburg section on
line of Bandcamp.
800 feet -
with 200 250 -

July, 1889

Ru7004 Box 30 F2

L
Section of Potsdam,
Calcareous & Chazy
rocks near & North of
U.S. Canada boundary,
Ct. N., 1889. July

2 July 24/89

Paleodan,

Section on the shore of
Missisquoi Bay a little
south of the US & Can-
ada boundary,

1. Thin bedded, gray, fine
grained sd - with *Trilobites*
Dinorthis 12.
St N. 20° dip 20° E.

Califerous.

1. Massive bedded mass
or less siliceous l -
with layer of quartzite
165 ft up & at same horizon
dip decreases to 10°
gray, of *Trilobites*

33.
5

33
8

16 5
7

This series of rocks
 from rough, ragged,
 outcrops -

360 -

2. Same colored limestone
 with veins of siliceous matter
 intercalating these into
~~places~~ some layer + natu-
 ations. A coriine shell
 A + section of *Ophileta*
 were seen. This section
 is nearly as the boundary
 between U.S. + Canada.

Following the junction of
 H + 2. In north it is traced
 across the road leading
 from Phillipsburg to
 St Armand where the
 strike owing around to
 N. 50 E. + dip is
 10 E. East. about as -

$$\begin{array}{r}
 85 \\
 207 \\
 57 \\
 360 \\
 \hline
 747
 \end{array}$$

1/2 a mile N. of the old
Methodist church (~~1819~~)
(dated 1819) the section was
taken ~~by~~ at the base
of the limestone. 2 -
2 = 105

3. Massive bedded calcareous
rock similar to 1. 35

4. Similar to 2 - 20.
St. N. 70° W, dip 20° S.

5. Similar to 1 + 3. 275.
St at summit N. 90° E,
dip 10° to 15° E.

6. Following on the strata
to the S.W., the few
beds of gray l. become
more numerous and
alternate with thin
dolomitic layers



to form massive beds
at the base from ch
Aphileta

Or 38 feet ch

Orthis

Bathyrus 2 sh.

Diptyomena

This is ~~near the road~~

200 yds N. of the road.

from Phillipsburg to St Ammand.

6 =

60

7. Massive bedded
siliceous + calcareous

bedrock

50.

These beds strike N-

70° East, a meander

interruption and the

section is taken where

where the strike

is N. 20° East.

Some much work is

carried down on the

fault I do not know.

Red

Red



8, Massive bedded
arenaceous l- with
dyamic layers on
laminella that increase
late of cut phase. The rock
in many places of also
parallel bedding
massive at base
Ophileta —————

• *Camencella*
Madurea



Z

Much like *M. magus*

At 140 feet zone of
Bathyrus Saffordii &
Eccrinurus
appear in a gray
shelly l -

At 245 feet zone
of *Ophidota*
etc etc in decomposed
rock.

245-

8 a The interbedded pelagic
material from at
least 1/2 of the rock &
quies. It has banded
appearance. At the
summit the zone of
Eccrinurus

$$\begin{array}{r}
 28 \\
 5 \\
 \hline
 149 \\
 57 \\
 \hline
 206
 \end{array}$$

29.

St. N + S, 104100 E, 18

occurrence of also common
number of Aphelicta
also Lituites - - 850 ft, 83

Note on 82

as far as I can
judge the same
species of Ecclesiophorus
& Aphelicta occur at
140 feet in 82. & also
at ~~850~~ but up in 32. We
have to await the
collection of specimens for
full determination.

82 Continued - At
102. The zone of
the large Lituites
comes in.

Conceded	15 ft
Book	10 ft
Member	12 ft

205

09.

$$\begin{array}{r} 32 \\ 160 \\ 21 \\ \hline 18128 \\ 5 \\ \hline 140 \end{array}$$

$$\begin{array}{r} 50 \\ 85 \\ 181 \\ \hline 323 \end{array}$$

Rock
Concreted

9
7.
13.

St N + S. 12h
122 E.

at 120 feet noticed
Eccrinurphoid sections -
Littorites $4\frac{3}{4}$ " occurs
the whorls.

fragments of Eccrinu-
rphoid occur all the
way up thru the section.

at 206 above the
first Littorites zone
a second zone occurs
in which the Littorites
are very abundant.

at 323 feet from the base
of 3a layer of hard
yellowish loess appears

323+

~~(over)~~

The Lower beds referred
to § 354 are fractured
in places on a grand
scale. Great masses of
the rock are broken &
reconstituted



Scale 12 feet to inch
Banded limestone reconstituted

4-

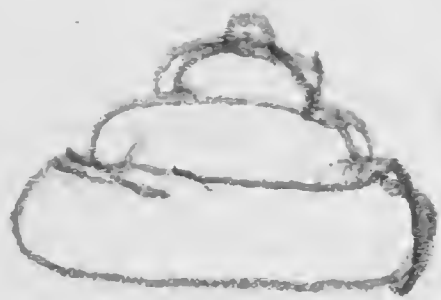
10

At 31 feet stage the
1st yellowish band the
fossils is evidently
changing.

Numerous small
sponges appear on
the surface of the rock.
Sections of a large
trilobite, head & tail - & a
broader chambered
Oriskany



also Strophomena —



At 40 feet section
of Pleurotomaria
like P.



25.

also Eumphale. ¹⁸



All of 4. is more or
less specialized in place.
The soft colored gray
l - appear to have been
a paste in which the
arenaceous layers were
broken up & mixed in.

To 4.1 vein

85th

5. Alternating bands
of soft gray l - with
* dark ~~l -~~
arenaceous layers.
at 17 feet note a
large Orthoceras

specimen 1/2 1/4 1/4 1/4 1/4

$$\begin{array}{r} 45. \\ 6 \\ \hline 51. \end{array}$$

$$\begin{array}{r} 28 \\ 5 \\ \hline 140 \end{array}$$

1

$$\begin{array}{r} 20 \\ 5 \\ \hline \end{array}$$

12

This belt continues on
up until at 110 feet
the light gray limestone
predominates. At this
point noted *Maclurea*
magna. & it occurs
all the way up. At
160 feet it is very
abundant & also at
the top of the outcrop
on the road from St
Armand north. 210
feet from the summit
of 4.

175
~~175~~

Note some *Orthoceras*
as 17 feet from bottom
of 5, also *Maclurea magna*
& sections of *Orthoceras*
Pleurotomaria & other
gastropods -

5)

massive bedded ~~thrust~~
 with argillaceous-calcareous
 bands cut up with
 annular borings (horizontal)
 These weather on out on the
 surface of the dome colored
 brownish & give rise
 to the so called ~~Antler~~
 Paleophycus —

Aug. 16, 1889

F2

Box 30

R07004

Phillipsburg Section

A locality of the conglomerate
of division D. of Sir W. Logan
section, Geol. Canada
occurs on the
central part of lot 29. North
side.

It is like that which occurs
at various horizons in the
Phillipsburg section, ~~but~~
It carries fossils *Machæra*
pandora etc, similar
to the upper beds of the
Phillipsburg section.

From the examination of
the "conglomerate" beds
of St Annade & Bedford
& their relations to the
adjacent rocks I think
that they are not
true conglomerates in
the sense of being Annade

up of transported
masses of the upper
beds of the Phillipsburg
section. The so-called
boulders of limestone are
modules & elongated concave-
trailing masses or layers
of the rock broken up &
recemented ~~in the bed~~
in situ. As I now
understand it the top of
the Phillipsburg section
is near the summit of the
Chazy zone & the Trenton
limestone comes in on top
of it as shown at
Highgate Springs

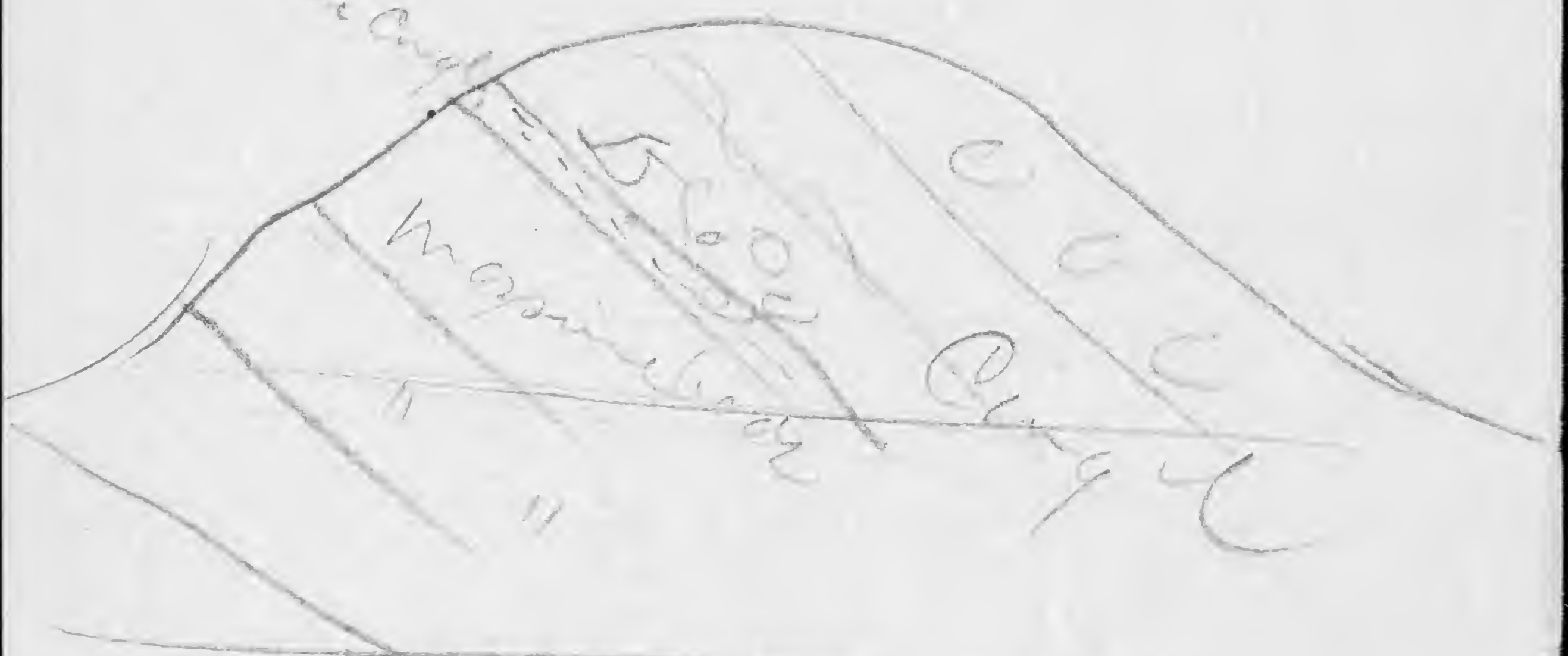
Lin W. Logan describes
20. of the Phillipsburg
section include strata
of the upper portion of

But much of C. of the
Phillipsburg section. Also
the red & green shales &
dark shales of the
Pillbury or Cambrian.
Believing that the Pillbury
was on top of the
Calceiferous terrane he
put the supposed
equivalent beds on top
of the Calceiferous zone
in the more southern
section between the
area north of Bedford
& St Annade

Attach to Philbrough
section

$\frac{1}{2}$ mi west of Bedford
a band of conglomerate
l. is crossed. Under
it a massive bed of
l. is continuous for
150 feet. In the
Machua pandora of

Bilbige is very abundant



St. N. 30. E.

Leith E. 30. S. ~~50~~ 50

^{1a.}
Ordovician

A little south
of Philadelphia on
the shore of Missisquoi
Bay the lower beds
of the Calcareous Sand-
rock are thin & even
on the shales &
interbedded thin layers
of limestone of the
Great Utica Series
at the foot of Nun
Kays bathing have steps
and graptolite in
a narrow band of
black shale.

Chimacograptus hemis-
pictus

Phillipsburg
Section
Aug 16/89

The summit beds of the
Phillipsburg section dip
to the eastward towards
the Dot Run track. Crossing
a meadow the massive
beds of the lower Cambrian
are met with. To the south
the latter beds are thrust
over onto the Calciferous
Chazy - Trenton. Utica
as thin bed of antelope
is pushed over first
are of them then the other

Chazy Cambrian

Trenton

Utica

Cambrian

Sept. 18/1890

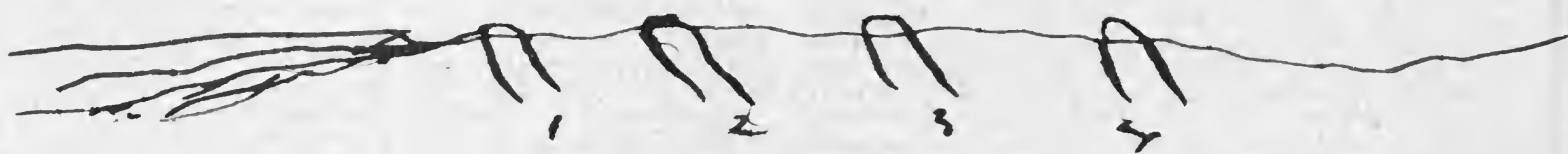
F2

Box 30

R07004

Section Mystic Quebec
Chazy. Sept 11/8/90.

Examined section near
Mystic, P. L. Canada. in
connection with L.R.W.
Ells.



The formation is a dolomitic
slate with bands of limestone
& limestone conglomerate
occurring as lenticular
masses in it. Two miles
north of Mystic the best
localities for fossils occur.
Several "lentils" of lim-
& congl occur. In one
a mile east of J. E.
Watson's house, graptolites
occur in a limestone with
Lingula — Rhynchonella

Handwritten text in Arabic script, likely a signature or a short note, located at the bottom of the page. The text is written in dark ink and is somewhat stylized.

2

etc. In another band
a large number of fossils
occur in situ.

See list Geol. Canada
1863. Also collections.

This series of slates forms
a broad belt and accord-
ing to Dr R. W. Ellis it
lies beneath the Frontenac
limestone. As it carries
Chazy fossils it is evidently
a development of ~~that~~
upper portion of that
terrane that is now
represented in the
St Armand section. The
thickness of this series
is estimated roughly
at 1000 feet. By
Logan

See Geol. Can. 1883.

July 20
St. Piran formation
Lake O'Hara 7.5 mi
South of Hector -

At the level of Lake
O'Hara a little east
of the ~~little~~ ^{Windy Peaks}
cliff of gray, hard, quartz-
itic sandstone outcrops
+ in this occurs -

Orthis theca -

Wanneria? gracile -

loc. 61e

(Same fauna as in)
Vermilion Pass.

The Windy Peaks rise
2200 feet above Lake
O'Hara - and the upper
200 (two hundred) feet is formed
of the arenaceous limestone
of the Mt Whyte formation.

The S.W. slope of the
east Windy Peak exposes
fully 2000 feet of the

1600.

3120.

RV 7004 Box 30 F. 2

Aug. 6, 1909

SIA2012-1154, SIA2012-1155, SIA2012-1156

R07004

Box 20

F2

July 20/1910

July 20/10.

Section on south & S.W.
sides of Continental
plateau above Lake
O'Hara.

Mt Huber.

Eldan?
Slippen?

Cathedral

at Whyte

St Piran

Eldan just above Mt Huber

" 600+ feet on Mt Victoria

" 800+ " " Mt Lefroy.

See panoramic photos
also Kodak,

900
350

550

St. Pirain formation

The N.E. cliff of
Mt. Odaray gives a
section of order 3000
feet.

Mt. Odaray Stephen formation. 200.

Cathedral.
Est. 1200 -

St. Pirain { 250
Mt. Whyte

See Kodak
photo

St. Pirain
1500 +

July 20/10

Aug. 21/16

F. 2

Box 30

Ru 7004

Aug. 21/16.

Whyte formation on
S.W. slope Mt. Temple
above ^{west side} Sentinel Pass.

Cathedral formation.

massive bedded light
gray arenaceous limestone
rising in cliffs above
terrace of Whyte formation

Whyte formation
Top bed.

1) Thin bedded impure
bluish gray limestone 22 feet

2) Greenish arenaceous
silicious shale in
massive beds. 107"
abundant. Small & large

3) Thin bedded ^{dinty gray} arenaceous
limestone. 3'6"

Aug 21/16

4. ² Coarse bedded gray
sandstone - 5'6"

5.

Coarse, reddish & gray
calcareous sandstone
with numerous frag-
ments of Obolus 23'

6

Greenish siliceous shale 3'

7. Reddish brown & gray
sandstone with some
layers quite calcareous
& almost made up of
fragments of Obolus 7
Total white. 17 feet

St Prain formation -
Alternating bands of
gray quartzitic sandstone
& greenish & gray
siliceous shale -
Several hundred feet
in thickness exposed

The lower portion of the section is formed of the massive bedded Fairview quartzitic sandstones. These may be seen at the Giant Stairs & outcrops on the west side of the upper portion of Paradise Valley & to the north they rise in the bold cliffs facing Bear Valley.

Collected a few Abolus in No. 2. O - which compare with those from Albertella shale of Wh. Whyte section.

R07004 Box 30 F. 2

Aug. 28, 1916

Aug. 28/16

~~White formation~~

~~Pope's Peak~~

~~Ross Lake Section.~~

~~Section measured in~~
amphitheater above
Ross lake ~~at~~ ^{on the} north
end ~~of~~ of the ~~two~~ north
spur ~~of~~ of Pope's Peak.

The base rests on the,
purplish colored massive
quartzites of the St. Pierre
formation on the
west slope of the
north east spur &
about 500 feet above
Ross lake. The summit
is on the north face of
the same spur.

(Add loc on pg here)

~~White formation~~

~~Cathedral formation~~

(Middle Cambrian)

La

2

Massive bedded, density
gray rough weathering
arenaceous limestone
with a band of steel
gray, hard, thin bedded
finely arenaceous limestone
32 thick at base 327 ft.

Whyte formation (4 - c -)

1. Gray to grayish black
(oolitic) thin bedded
limestone 43'

Fossils. Many small
fragments of trilobites.

2. Finely banded gray
sandstone & hard
arenaceous limestone. 5'

3. Gray - finely oolitic
limestone in thick
beds that break down
into thin irregular

layers
 fauna. An 15 feet from
 summit,

63K) Stenotheca
Scenella
Msusia
 Ptychoparia

4. Banded sandstone and
 finely arenaceous shale
 in massive beds that
 break down on weathering
 into arenaceous shaly
 layers usually
 covered more or less
 thickly with annulated
 trails & more rarely
 tracks of trilobites.

5. Greenish, drab and
 buff colored very fine
~~reticulate~~ shale with partings
 of thin layers of
 compact sandstone.

Fossils. Noted a valve
of *Micrometra* and
~~crassidium~~ of *Ptycho-*
paria.

6. Calcareous sandstone
with dirty brown &
rusty layers & shaly
sandstone partings.
27'

Fossils

63⁴ -
Corynexochus fieldensis 4
Alenellus (many fragments)

Total thickness of
White formation 248'

St Piran formation,
massive bedded
purplish quartzitic
sandstones that form
cliffs above Ross Lake.

the cliff forming
limestone of the forma-
tion above.

135 ft.

Fauna

In the upper
band of calcitic limestone

63^a, *Nisus*

Hyalites

Ptychoparia

Cephalopoda

63^c)

at 85 feet from the base

Ptychoparia

At 62 feet from the base
numerous fragments of
trilobite tests occur but
not too much broken up
to recognize genus or
species.

The fauna ^{near} ~~at~~ the summit
is the same as that
in the calcitic limestone

in the section of the
Whyte formation at
McArthur Pass and
Mount Stephen.

2) Thin bands of dark gray
arenaceous shale, alterna-
ting with hard, thin
layers of uneven greenish
brownish gray sandstone
~~the~~ 57 ft.

This band forms a low
cliff on the face slopes
of Ptarmigan, Richardson
& Redoubt mountains
when not covered by
talus of the limestone
cliffs above
Fauna.

The surface of the sandstone
is thickly marked by casts
of annelid trails and
borings.

$$\begin{array}{r} 135 \\ 57 \\ 43 \\ 17 \\ \hline 252. \end{array}$$

3) Fine grained, dirty gray to greenish arenaceous shale. ~~with fragments of trilobites~~ -

43.

Fauna.

Fragments of trilobites. Ptychoparia recognized.

4) Thin bedded gray ~~massive arenaceous~~ limestone more or less calcareous, hard sandstone.

17

Fauna -

Alenellus canadensis n.
Mesonacis gilberti n.
Corynexochus (Bornia)
fieldensis

Total of Whyte formation. 252^{ft}

P. B. Section 6

Thin bedded, gray -
rusty weathering dense -
crystalline limestone.
Atrypa fragments in
great abundance.

Total -

1754
870
370

St. Brian

1) Gross bedded, gray,
brownish weathering.
sandstone.

68

2) Thick bedded,
hard, light gray
quartzitic sandstone.
Bryolithus Planolites.
(ch)

430

3. Shaly & thin bedded
light brownish to
gray sandstone -

57

4. Thick bedded, light
gray, quartzitic, cliff
forming.

$$\begin{array}{r}
 16 \\
 46 \\
 \hline
 235
 \end{array}$$

200.

11
sandstone.

P.P. Section

230

Fine Scalithus occur
in immense numbers
in many layers varying
from ²inches to ²feet
thick.

~~230~~
785

Lake Louise shale.

[Crusiana & Haulites.

Dark siliceous shale

22

Fairview formation

1) Thick bedded, light,
gray, occasionally
cross bedded, quartzitic
sandstone with a little
trace of purple color
in a few layers.

260

2) Light gray to brownish
gray sandstone in thin
layers.

22

3) Massive bedded con-

150.

glomerate with white
 quartz pebbles
 in & bits of chert &
 greenish shale in
 coarse sandstone
 matrix - Several
 irregular but tiles
 & thin bands of
 shale occur in the
 lower portion.

170
 452

Uncertainty,
Algonkian.

Greenish gray siliceous
 shales with a massive
 bedded very coarse
 conglomerate about
 400 feet below
 the Cambrian.

The section is here cut
 off by a fault.

Ru 7004 Box 30
F. 2

Aug 28, 1916

Aug. 28/16.

~~White formation~~

Paper Peak section
North spur above
Ross Lake.

Cathedral formation
massive bedded light
gray limestone.

~~White formation~~

1) Thin bedded more or
less arenaceous & mottled
limestone. 155.

2) Bluish lim in thin
irregular layers interbedded
w/ greenish shale 3

& dark

3) Greenish, compact
siliceous shale
weathering light gray
in large exposure. 7th
Albentella fauna. (63.)

160

172

275

52

43

702

275

4) ²Massive, bedded
& arenaceous lm 160.

5) Compact ^{dark} gray lm - 12

6. massive, dirty, gray
rough weathering
& calcareous sandstone 275.

7. Alternating bluish
& steel-gray, hard
limestone, 52.

White Formation 664. 499

18. Caliche limestones
with fragments
of fossils! 43

29. Finely banded gray
sandstone & hard are-
naceous limestone. 5

3
70. Gray, finely calcitic
limestone in thick
beds that break

$$\begin{array}{r} 66 \\ 70 \\ 85 \\ 27 \\ \hline 248. \end{array}$$

3

down into thin
irregular layers -

at 15 feet from top, 18

63^H Stenotheca abundant.

Nuscia
Scenedella
pty -

4^H Similar to 9.

Banded sandstone & fine
arenaceous shale in massive beds
that break down into
arenaceous shaly layers
usually covered more
or less thickly with
Annelid trails - 70

5^H greenish & drab
to buff very fine
shale with sand-
stone partings - 85
Microneura. pty -

6^H 73 Calcareous sandstone
with dirty brown rusty
layers with greenish
arenaceous shaly parting 27.

Corynoechus feldensis
Olenellus (many fragments
 that almost make
 up layers.

Note.

This section shows that
 the *Albertella* fauna
 occurs 702 feet above
 the horizon at which
 it was formerly supposed to
 occur above
 the *Olenellus* zone
 of the Mr Besworth
 section.

Sp. Poran.

massive bedded
 purplish quartzite.

R 07004 Box 30 F 2

July 12/17

July 17/12.
Mt Whyte formation,
East face Mt Odaoy.

Going up,

Reddish-brown fine
medium grained hard
sandstones of Sp. Plain
formation.

Mt Whyte,

a. Bluish-gray and
dome colored hard
limestone with irregu-
lar to ~~linear~~ stringers
of arenaceous Thuyne-
man limestone subparallel
to the bedding. ^{layer 2nd 2-6"} 39ft

b. Reddish brown medium
grained sd with thick
layers 18" 2ft. 13 17ft

c. Gray arenaceous
dolomitic limestone

$$\begin{array}{r}
 56. \\
 204 \\
 \hline
 260.
 \end{array}$$

90. 35.

in thick layers. Weather
to rough dirty gray
surface. (78) Obolitic 3 ft 102 ft
Fam. Olenellus
Strophomena synochus Fieldensis
Steel: gray, rough
brownish weathering
shale siliceous shale. 8 ft
Fam. micrometra (9) Charon.

E. Bluish-gray lime.

with thin stringers
& layers of arenaceous
mag - lime - that
weather in relief.

Fam. On back. 46 ft.

63 ft. 7. Bluish to steel gray
siliceous shale similar
to d. 52 ft.

Coarse
g. ~~Reddish~~ Gray. mag
lime weathering to a
reddish dirty brown
color.

The fauna of E. in
the calcitic layers
includes -

(3h) *Misusia* (

Acrocephalites

Corynexochus (B) *fieldensis*

Abrellus canadensis

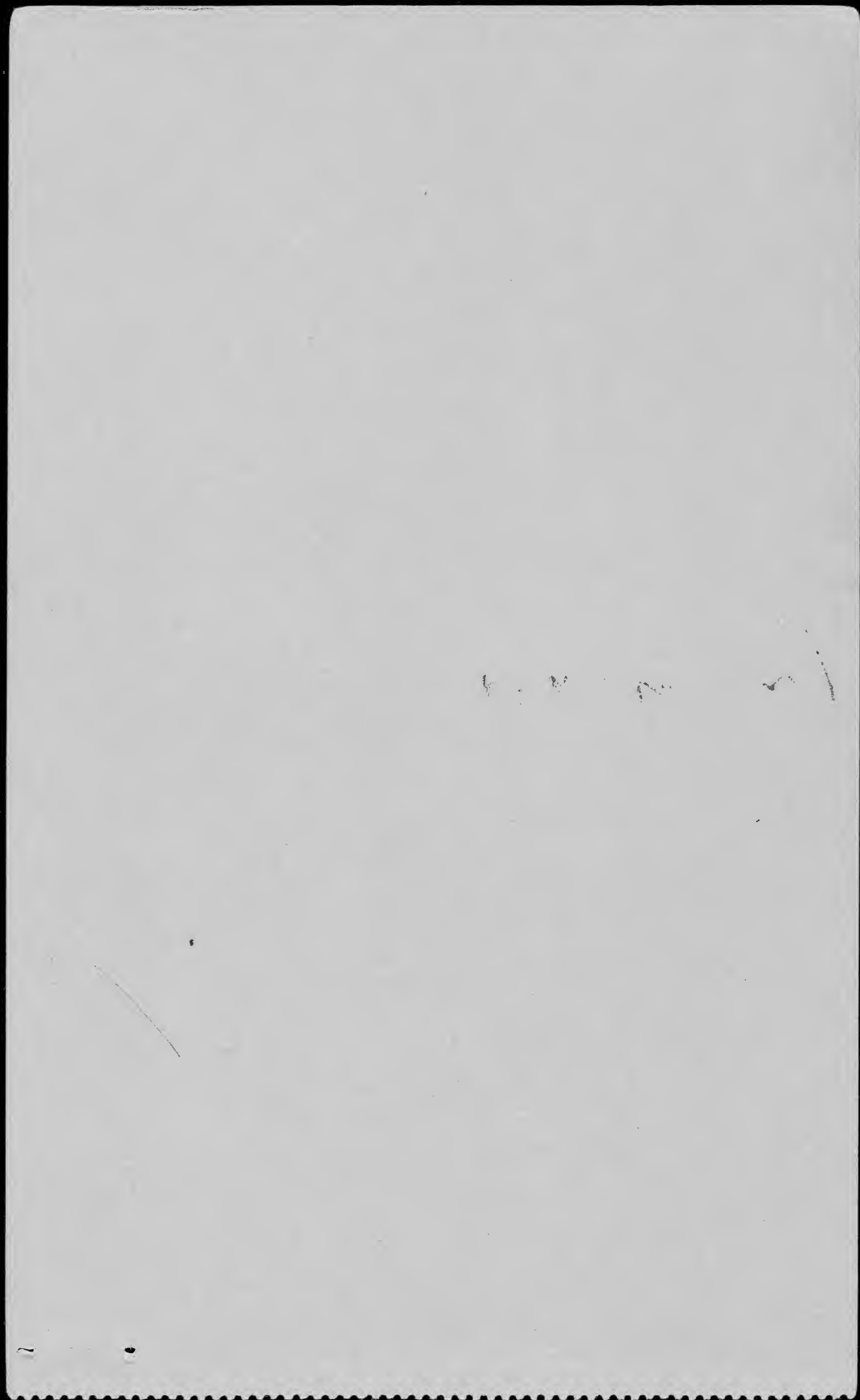
$$\begin{array}{r} 35 \\ 8 \\ \hline 280 \end{array}$$

23

$$\begin{array}{r} 36 \\ 23 \\ \hline 59 \end{array}$$

The section is here
cut off by a N + S -
fault.

D. E. F. + G. are probably
Plasmigan formation.



Ru 7004 Box 30 F2

July 2, 1888

July 2^a/88.
Phillipsburg, Tenn.
Colonies section -

The section east from
Mississippi Bay crosses
general of the "Colonies of
Marion nearly on the
boundary line between
the U.S. & Can. -

at the surface of the
water the Potsdam
sandstone occurs with
Lingulepis acuminata.

Upon the sandstone an
~~Calcareous sandstone~~
arenaceous l. - occurs
in wh. - On this & traces
of trilobites were found.

The massive layers of
Calcareous sd rock
followed by dark
colored l. - dark
calc. - sd - just beyond
the 1st N & S road -

Banded oncoracans l-
 + dark colored l- succeed
 + then massive beds
 of dark l- with
 numerous fossils -

Orthoceras,

Spirifer -

Orthis -

Bathyurus Saffordii etc
 + about 100 feet higher
 in the section.

Aphileta -

Eccurionophalus - etc.

The banded massive
 layers then continue
 on to ^{nearly} the next road
 east.

The average strike

is N. 20° to 30° E.

with 25° to 20° to 10° E.

Before reaching the road
 N. S. W. of St Armand +
 a little north of the



Band on the strike
 swings around to N.
 70° E. & the dip is 70°
 N. beside the road.

On the line of the
 Band on the dip is
 slight. All the
 structure goes to show
 the presence of a fault
 line at the east base
 of the cliff & the section
 is cut off.

East of the section in the
 Rock River valley the
 Phillipsburg Limestone is
 broken & disturbed between
 the unbroken section &
 the Cambrian on the
 east.

Note: By Marco's trick the
section has crossed 3 ~~of~~
colonies but by the
section the stratigraphic
section is unbroken &
the passage from the
Potsdam to the Calceolar
is the same as in all
normal sections of the
same horizons elsewhere.

There is no reason
that I can ~~ascertain~~
why the theory of Barrois
Colonies should be
lost in this section to
explain that which is
the same as in all
the sections running from
the Potsdam up on
the east side of Lake
Champlain.

And Marco has introduced
the slate at various points
as to make the limestone

affirm as tho it was
in elongated masses but
a careful study shows
that the limestone is a
continuous mass from the
lake to the 2d ^{N + S} road east
on the Boundary -

At one place he has
slate indicated where
a massive bed of l-
completely cuts across
the line of the slate
as indicated on his
map. Again a
cliff of 100 feet high faces
a meadow. The latter
is put as slate - He
has indicated slate in
all drift covered localities
altho' by close search
outcrops of l- ~~mass~~ can
be found scattered here &
there - The drift filled

depressions are excavated
 in the l - as far as
 the evidence goes if the
 slate is not present in
situ. Some bits occur
 in the drift.

The Theory of Colonies is
 not needed to explain the
 phenomena observed & there
 is not any evidence in
 favor of the Theory.

June 28th 88.

East Shore of Missisquoi Bay -

1 1/2 Mi. S. of Phillipsburgh. Canada
Near a small Cold Spring -

At base of the Cliff. ^{There} exposed
about 15 ft of Sandstone, in
layers varying from an inch
to 15 inches in thickness -

Strike N 30° E -

Dip 35° E.

In this Sandstone numerous
specimens of "Lingulopsis
Pinnatifida" were found.

In its physical and
lithologic characters this
Sandstone is essentially
the same as the Potsdam
Sandstone at Whitehall
at the head of Lake Champlain
and the same ^{species of} fossil
occurs at each place.

Overlying the Sandstone

There is a massive ~~Calcareous~~
arenaceous limestone, which
in turn has a band of
rose colored limestone in
which numerous fossils occur.
A small "Orthis" and
fragments of a species of
"Trilobites" were observed - Also
a small sponge. Similar in
its macroscopic appearance
to the one described by
Prof. H. M. Suckley - From
the Calcareous or Chazy
limestone. ~~near~~



Section from Rock Run north along
East-shore of Minisquiri Bay.



July 21/17

R07004

Box 30

F. 2

July 21/17

West slope of Narao Point Mt.
2.5 mi's. S. of Hector on C.P. Ry. B.C.
Can. East side Cataract Brook
Canyon.

Cathedral limestone
Not measured

Plummergan? formation

1) Thin bedded finely bluish-
gray limestone that is more
or less arenaceous. 48 ft

Wlyte formation

2) Thick layer of gray
limestone that breaks
into thin layers on
weathering

at 42 feet (m) down
fossils occur (Loc. 63.5)

calcareous

3) Banded & siliceous beds
with calcareous
partings

72

54

B) Steel gray siliceous
shale. 9ft

St. Prän
massive bedded reddish
& grayish silt - with
numerous fragments of
Alveolites.

The upper bed. 1. may
represent the Ptarmigan
formation. No traces
of the Ross Lake shale
were found in the well
exposed section. altho
it is well developed
on the northeast slope
of Karao Mts.

This section is quite unlike
the Mr. Schaffer section
5.5 mi' to the south.